FIG. 1A

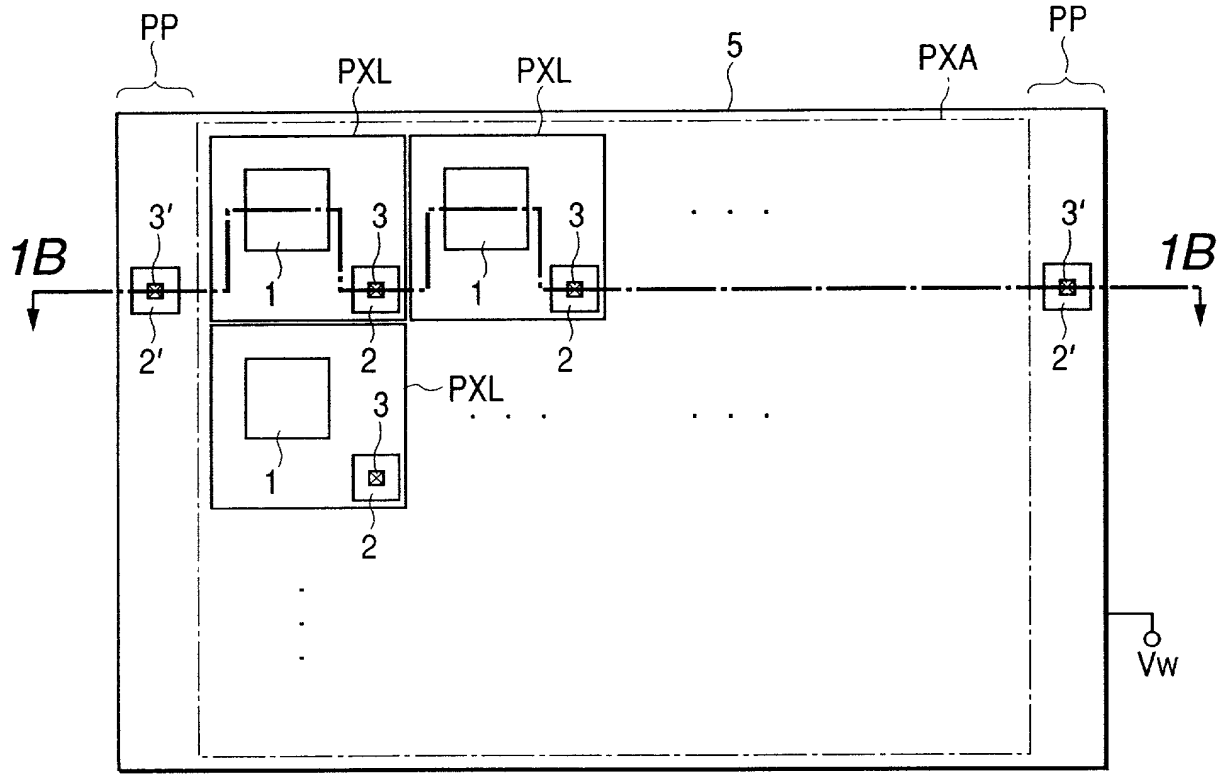

PP
PXL
PXL
5
PXA
PP
3'
3
3
3'
1B
1B
1
1
2'
2
2
2'
PXL
3
1
2
Vw

FIG. 1B

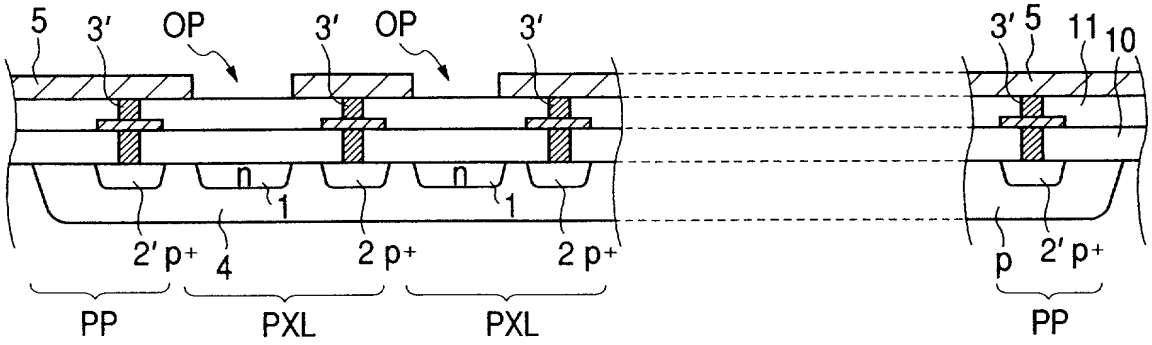

5
3'
OP
3'
OP
3'
3' 5
11
10
n
n
1
1
2' p+
4
2 p+
2 p+
p
2' p+
PP
PXL
PXL
PP

FIG. 1C

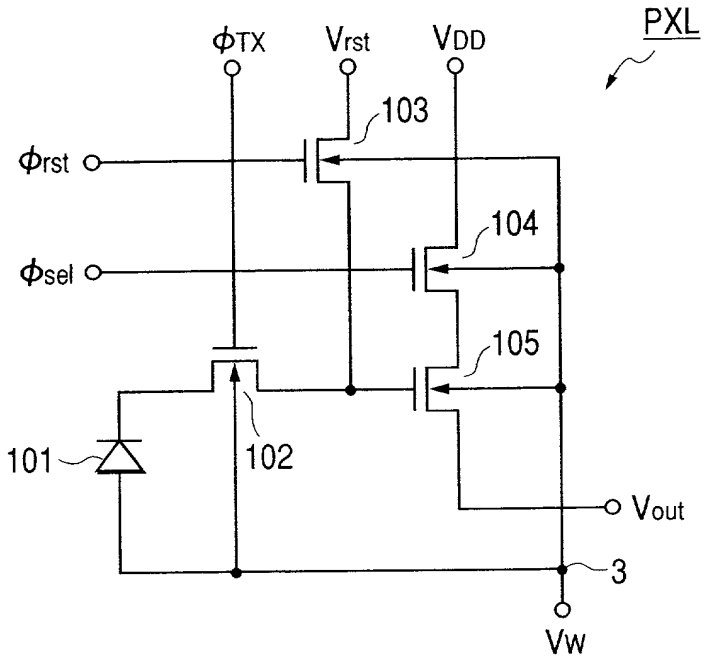

PXL
ϕTX
Vrst
VDD
103
ϕrst
104
ϕsel
105
101
102
Vout
3
Vw

FIG. 1D

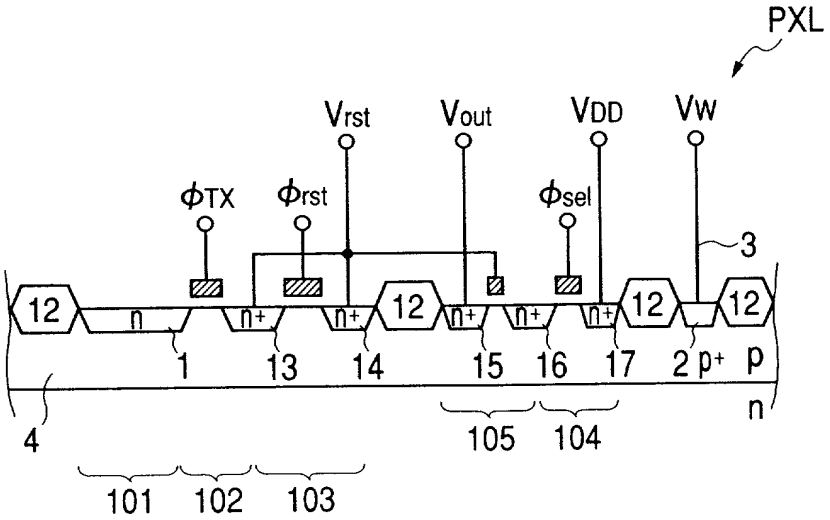

PXL
Vrst
Vout
VDD
Vw
ϕTX
ϕrst
ϕsel
3
12
n
n+
p+
p
1
13
14
15
16
17
2
4
n
105
104
101
102
103

FIG. 2A

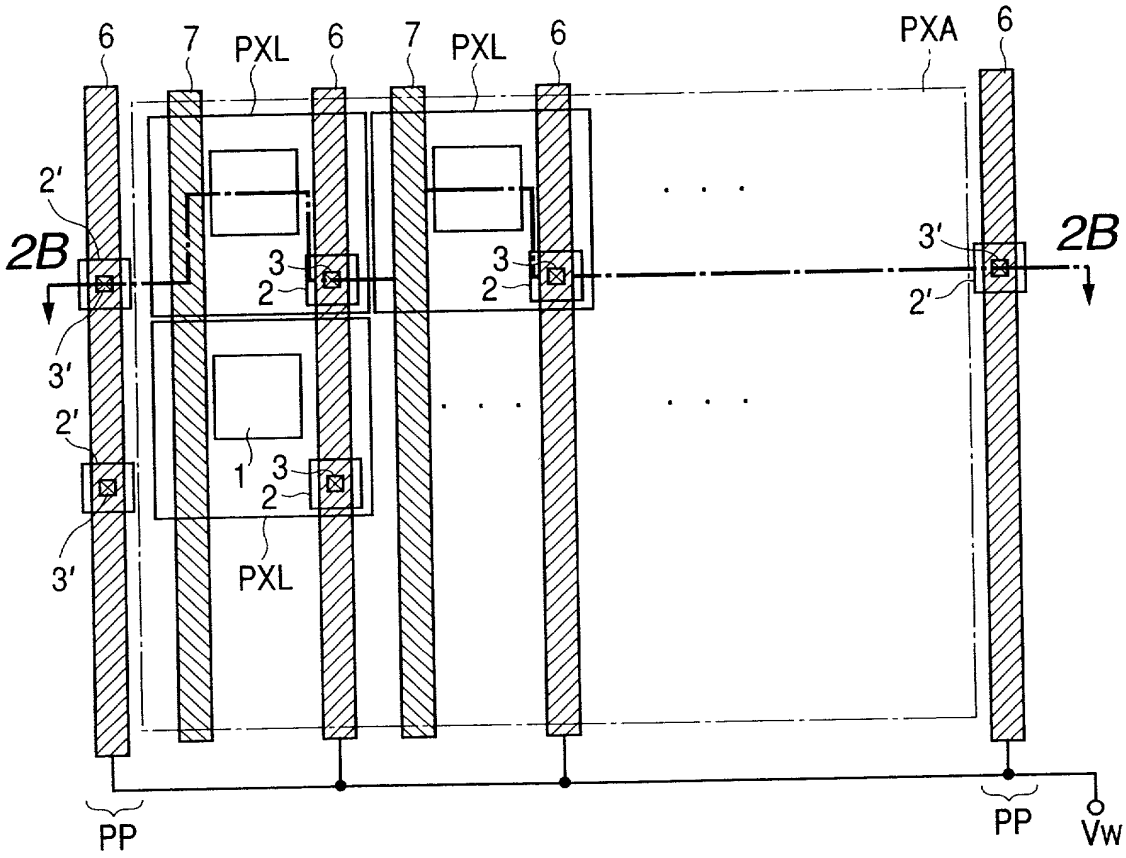

6
7
PXL
6
7
PXL
6
PXA
6
2'
2B
3
2
3
2
3'
2B
3'
2'
2'
1
3
2
3'
PXL
PP
PP
Vw

FIG. 2B

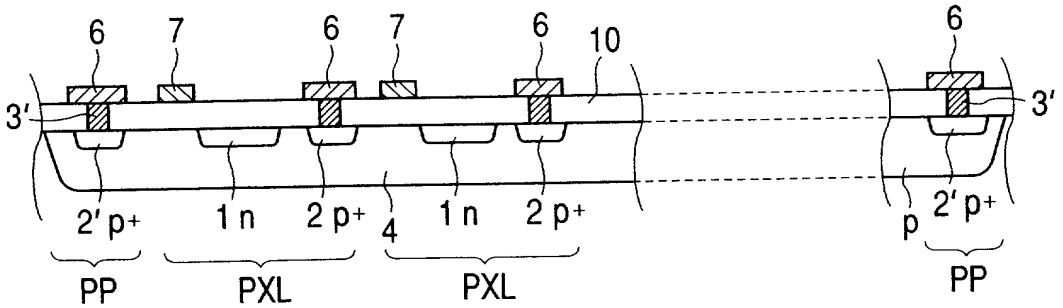

6
7
6
7
6
10
6
3'
3'
2' p+
1 n
2 p+
4
1 n
2 p+
p
2' p+
PP
PXL
PXL
PP

FIG. 3

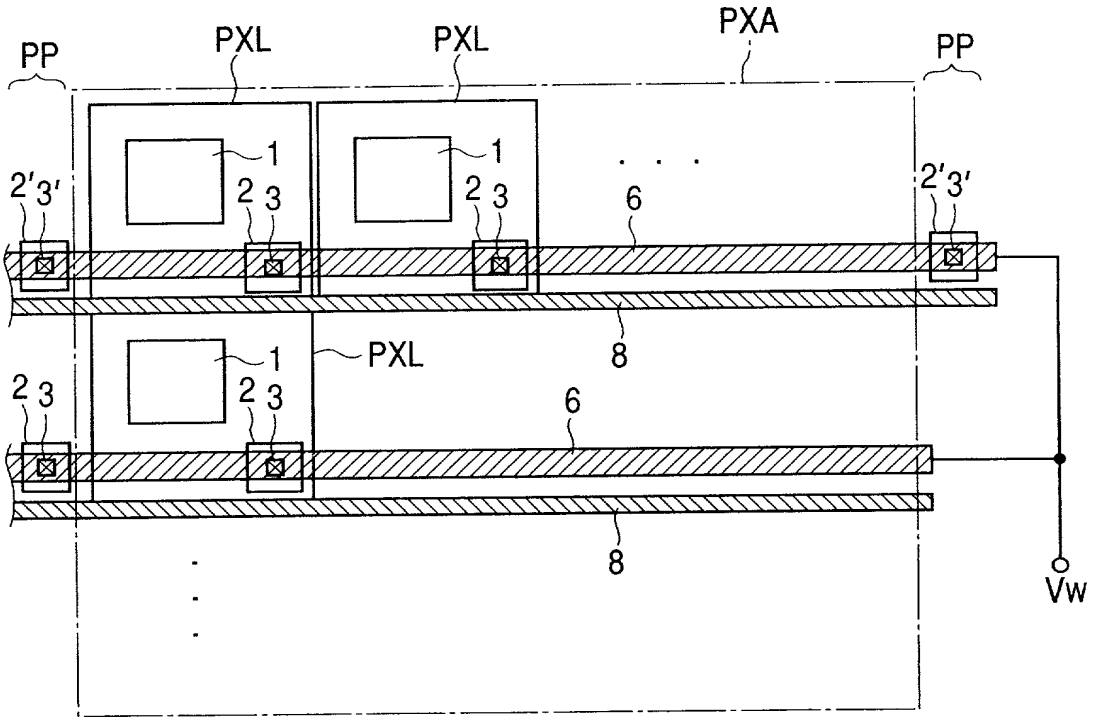


FIG. 4A

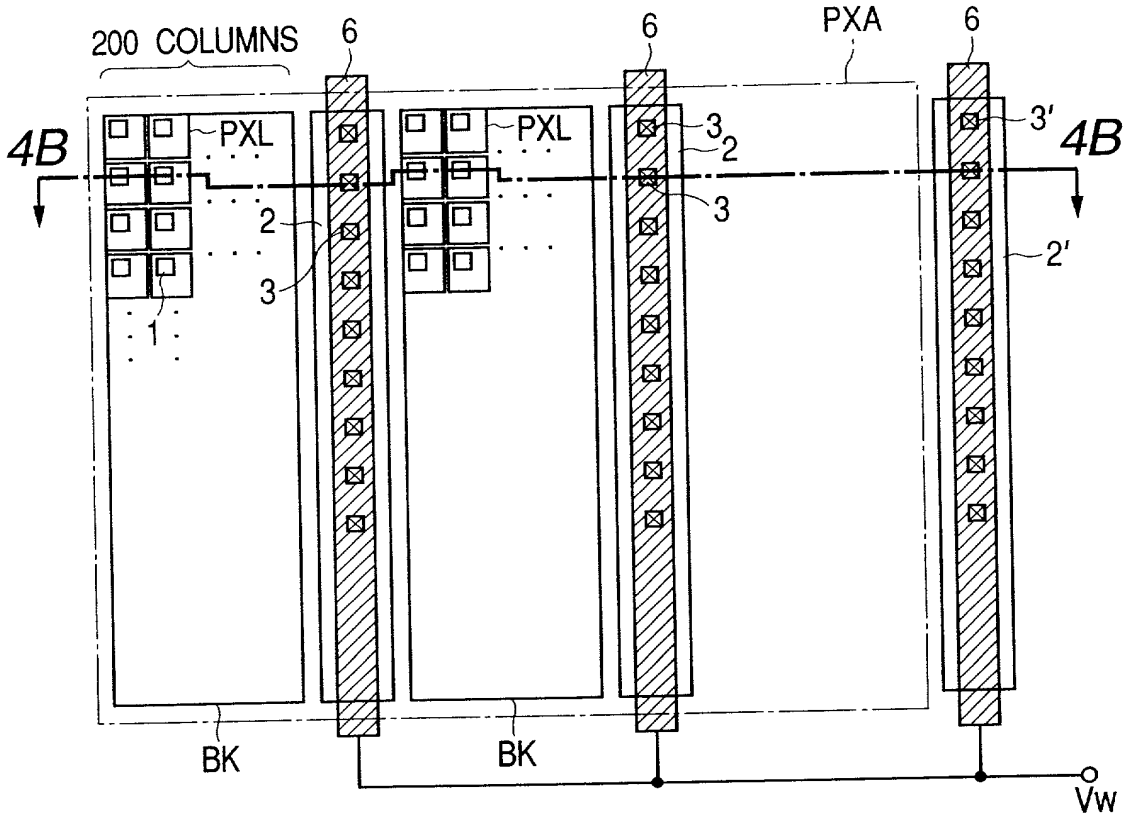

200 COLUMNS
6
6
PXA
6
4B
PXL
PXL
3
2
3'
4B
2
3
2'
1
BK
BK
Vw

FIG. 4B

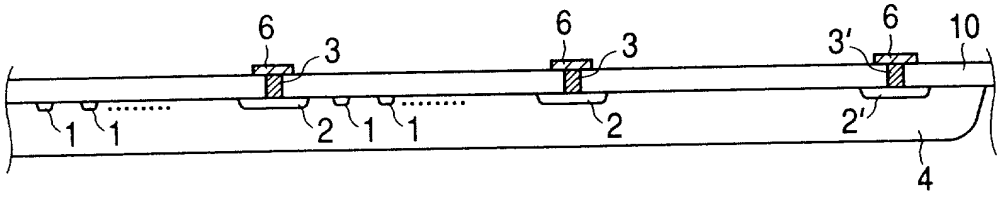

6
3
6
3
3'
6
10
1
1
2
1
1
2
2'
4

FIG. 5

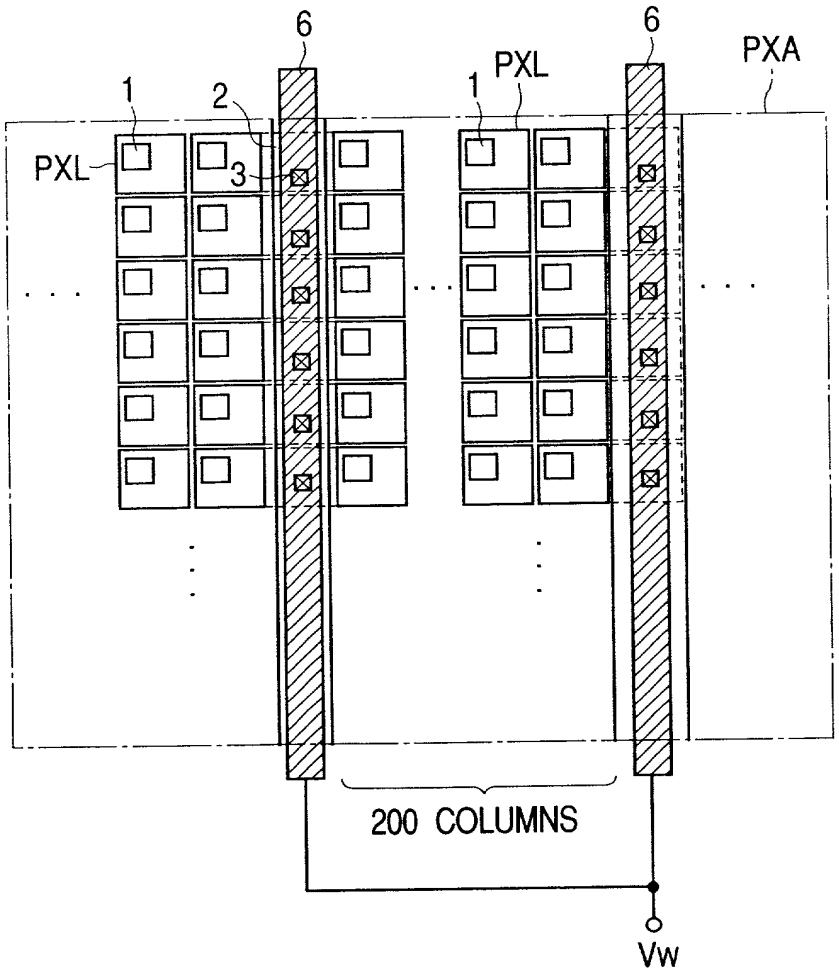


FIG. 6

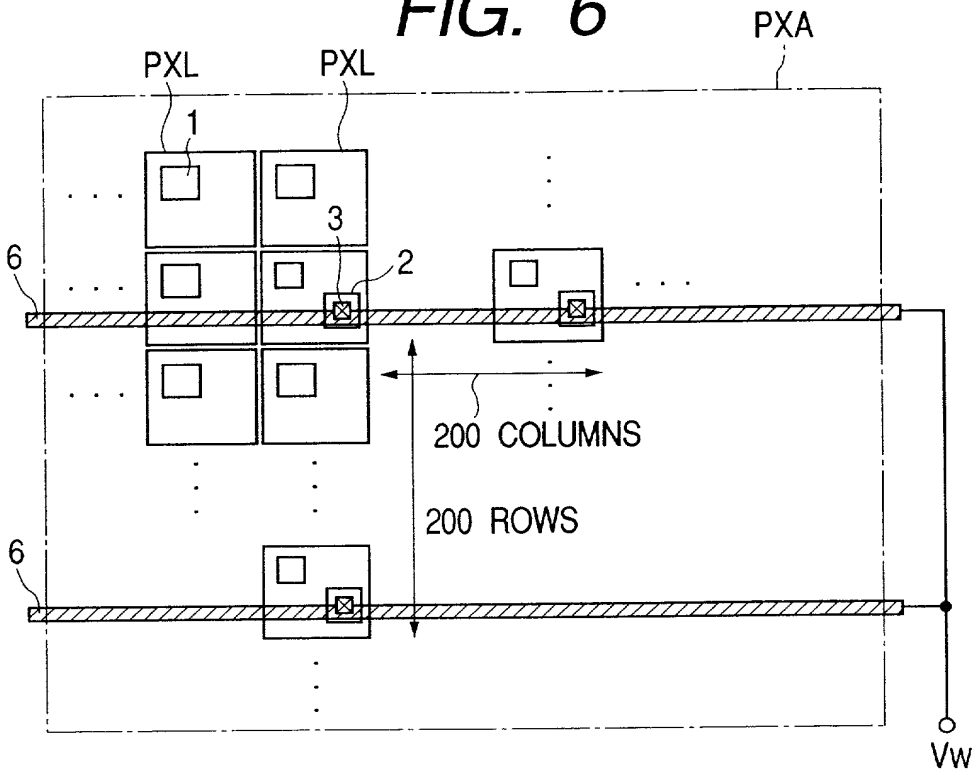

PXA
PXL
PXL
1
3
2
6
6
200 COLUMNS
200 ROWS
Vw

FIG. 7

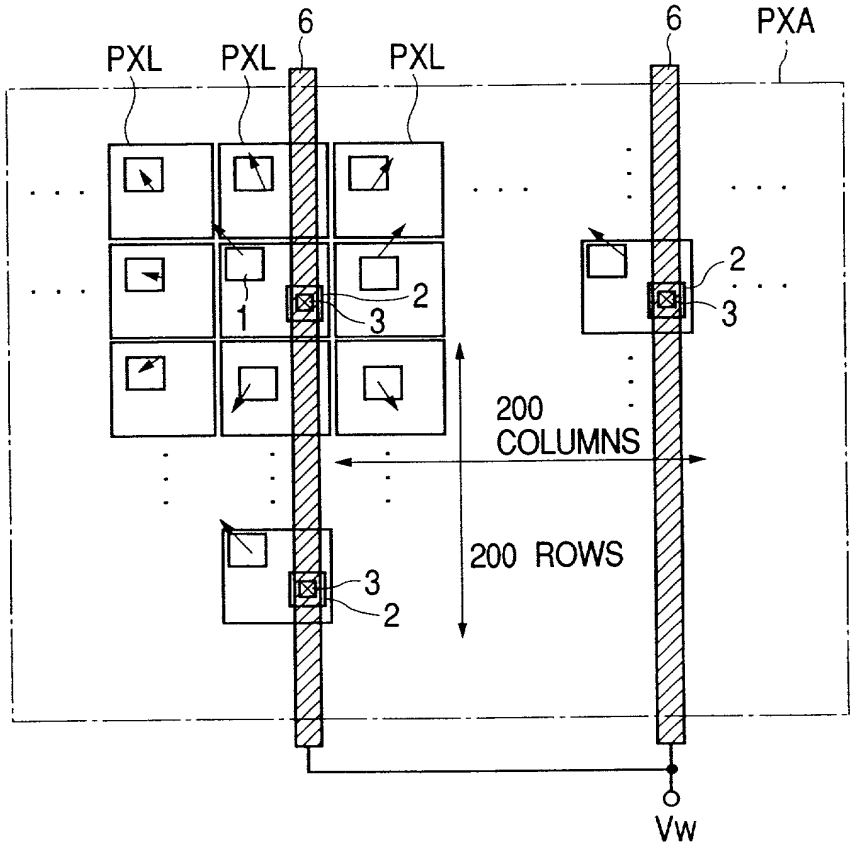

6
6
PXA
PXL
PXL
PXL
1
2
3
2
3
200
COLUMNS
200 ROWS
3
2
Vw

FIG. 8

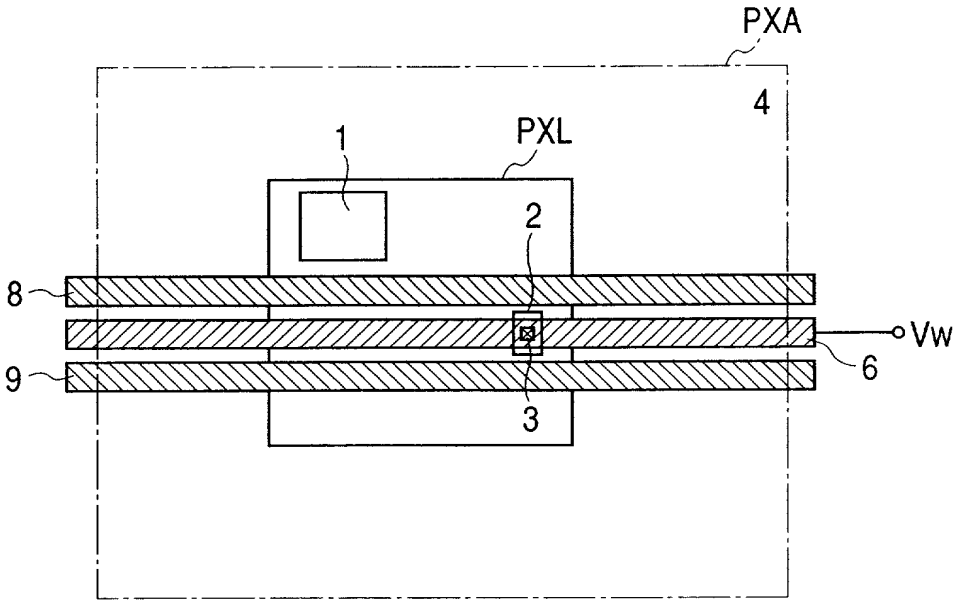


FIG. 9

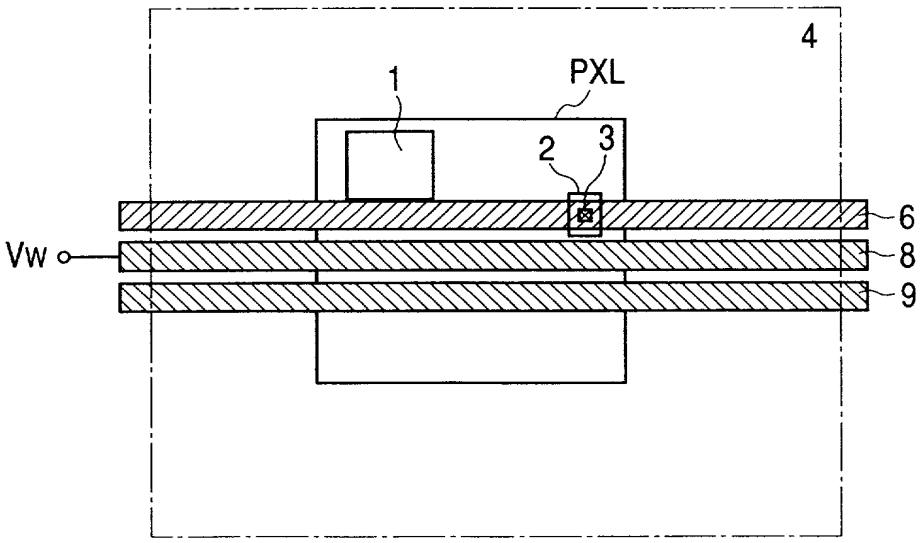


FIG. 10A

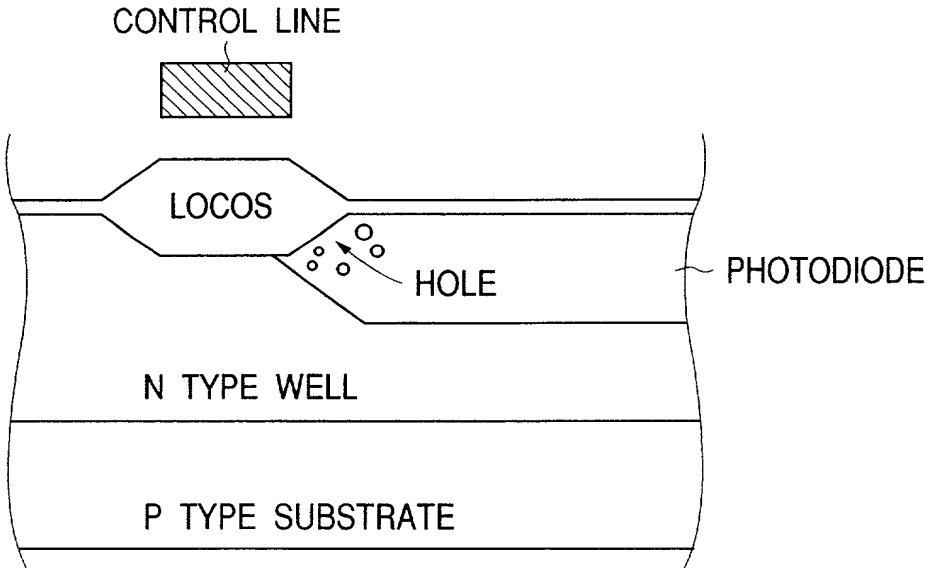


FIG. 10B

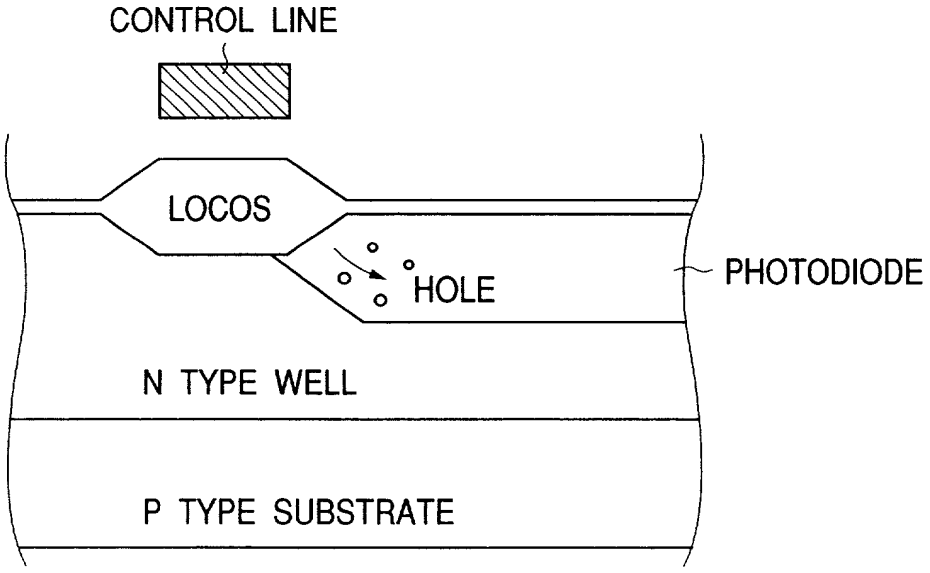


FIG. 11

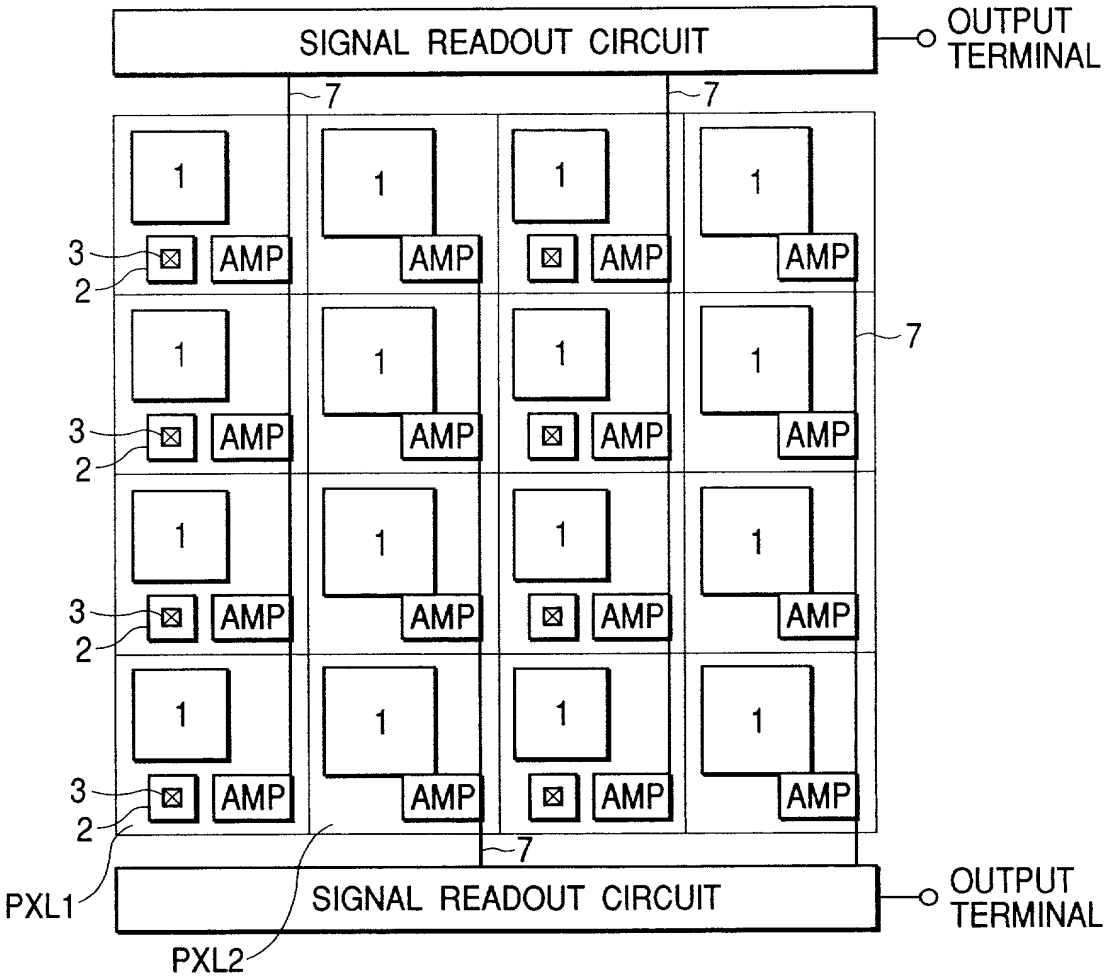

SIGNAL READOUT CIRCUIT
OUTPUT TERMINAL
7
1
AMP
3
2
PXL1
PXL2
SIGNAL READOUT CIRCUIT
OUTPUT TERMINAL

FIG. 12

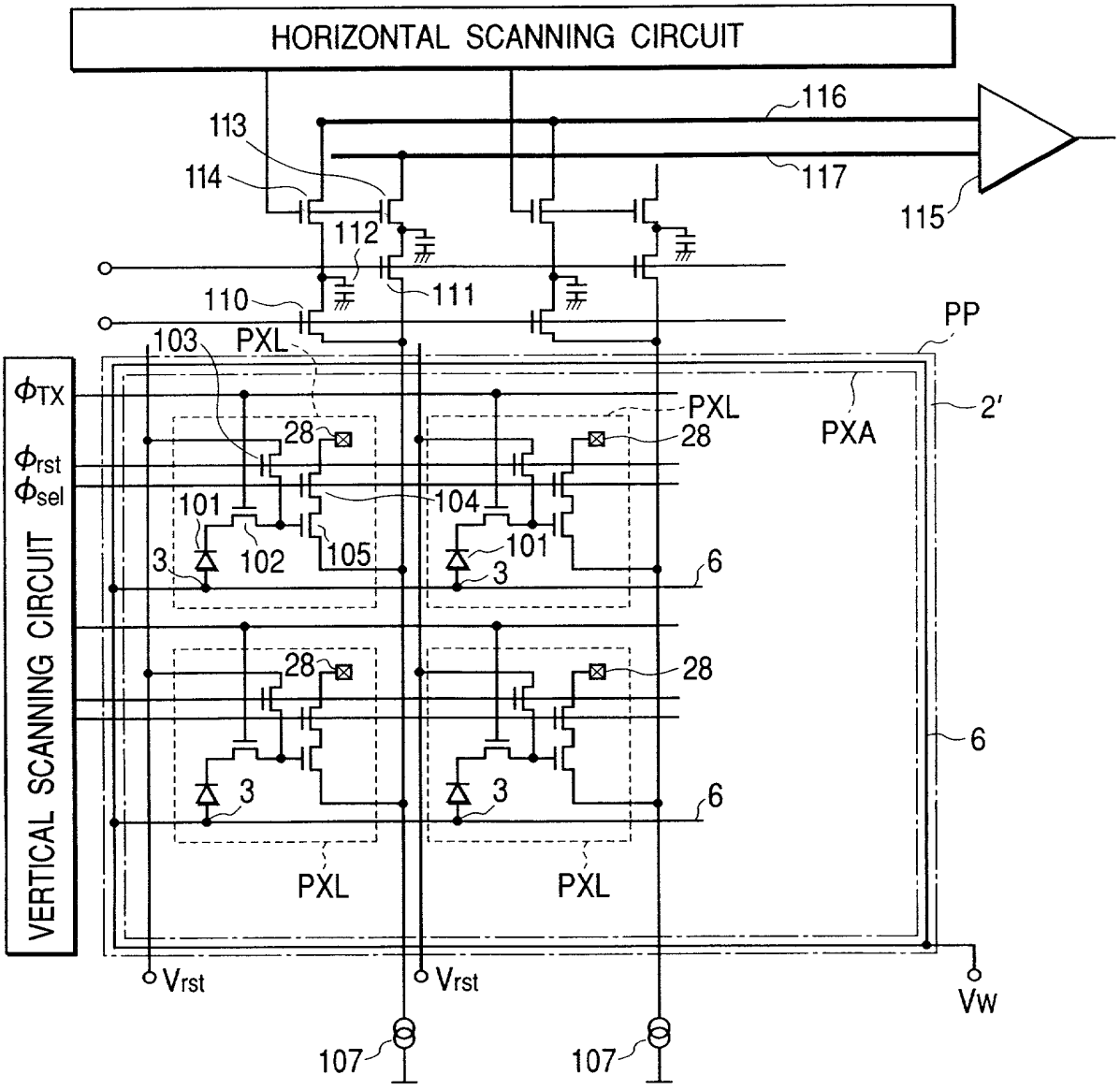

HORIZONTAL SCANNING CIRCUIT
VERTICAL SCANNING CIRCUIT
ΦTX
Φrst
Φsel
113
114
116
117
115
112
111
110
103
PXL
PP
PXA
2'
28
101
102
104
105
3
6
107
Vrst
Vw

FIG. 13

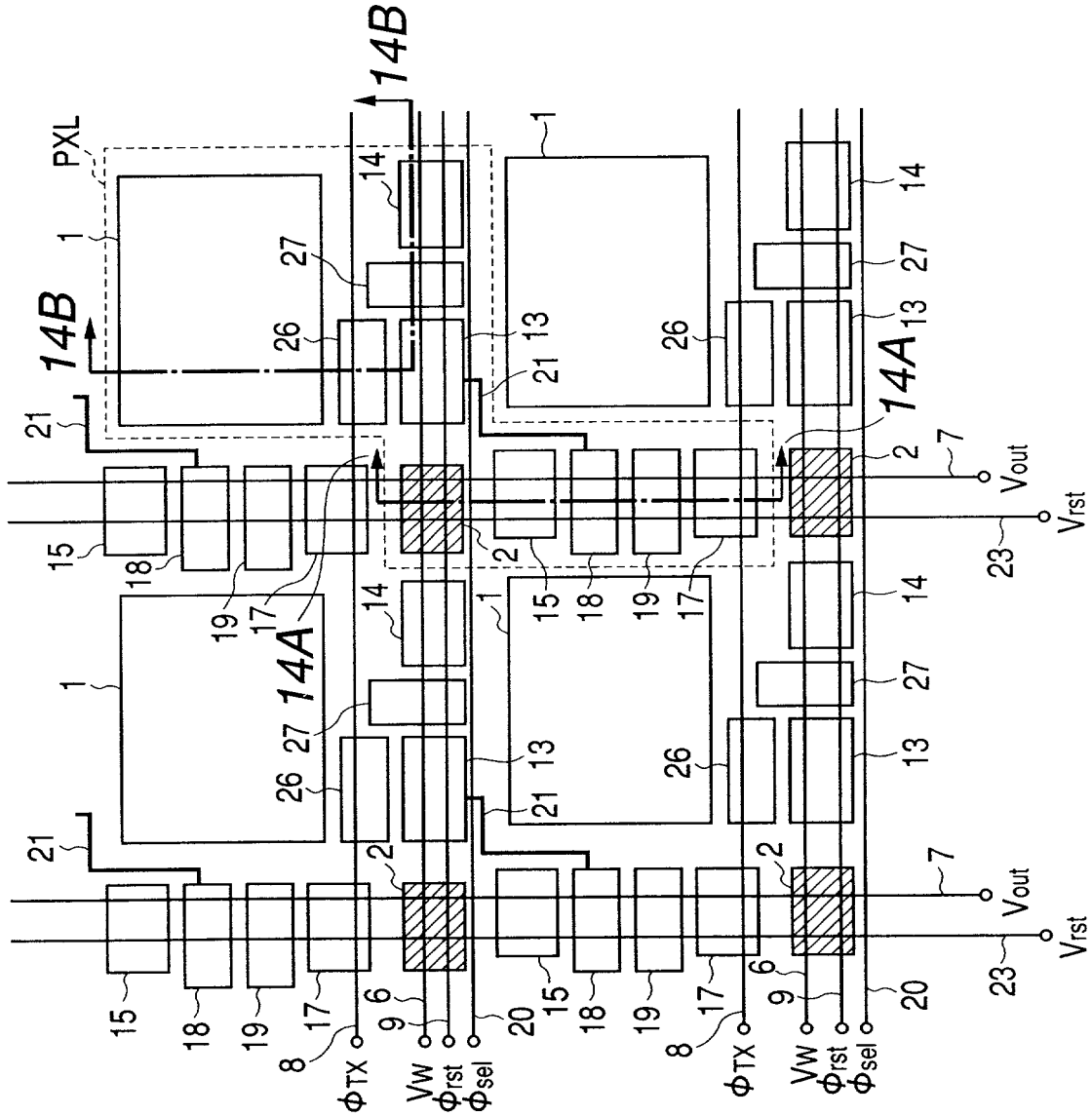


FIG. 14A

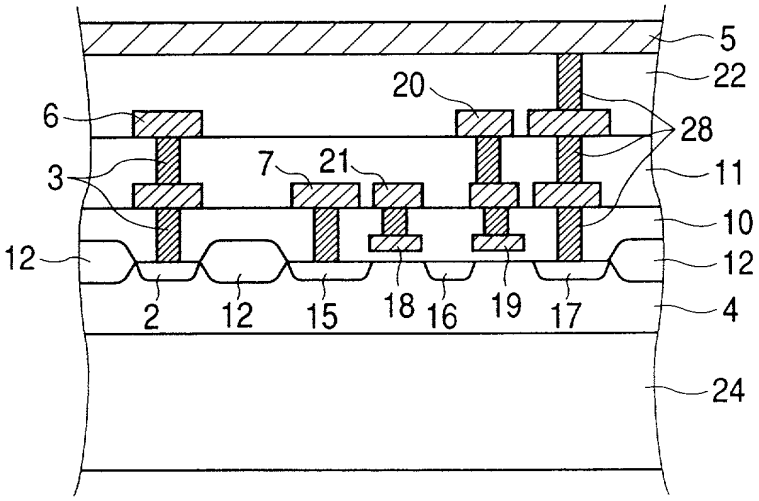
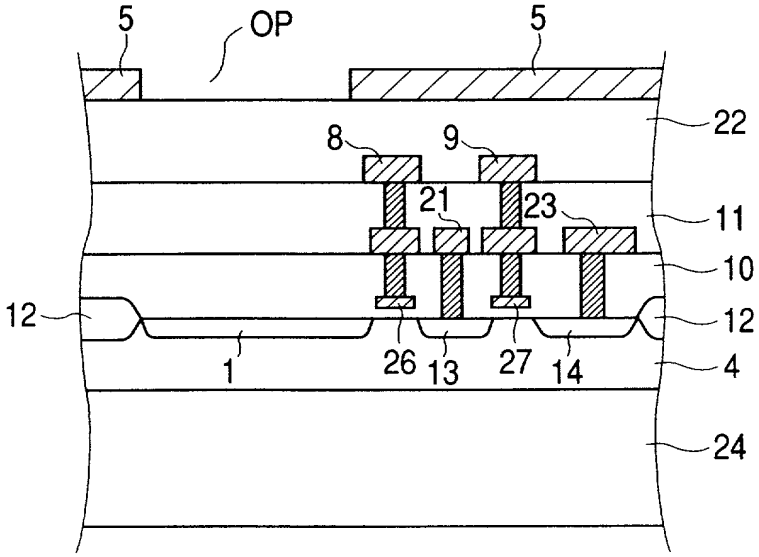


FIG. 14B



pct/jp2004/002460

FIG. 15

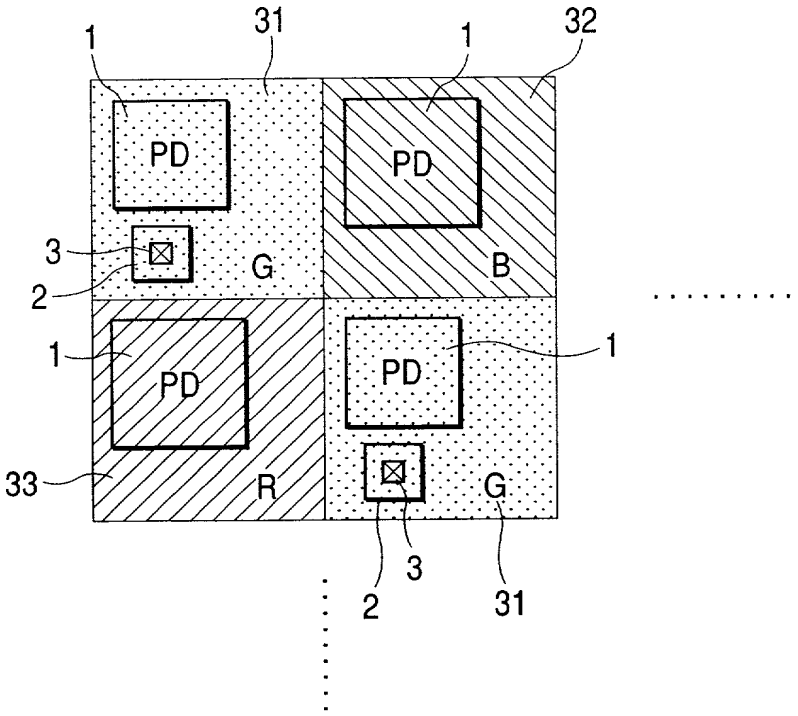


FIG. 16

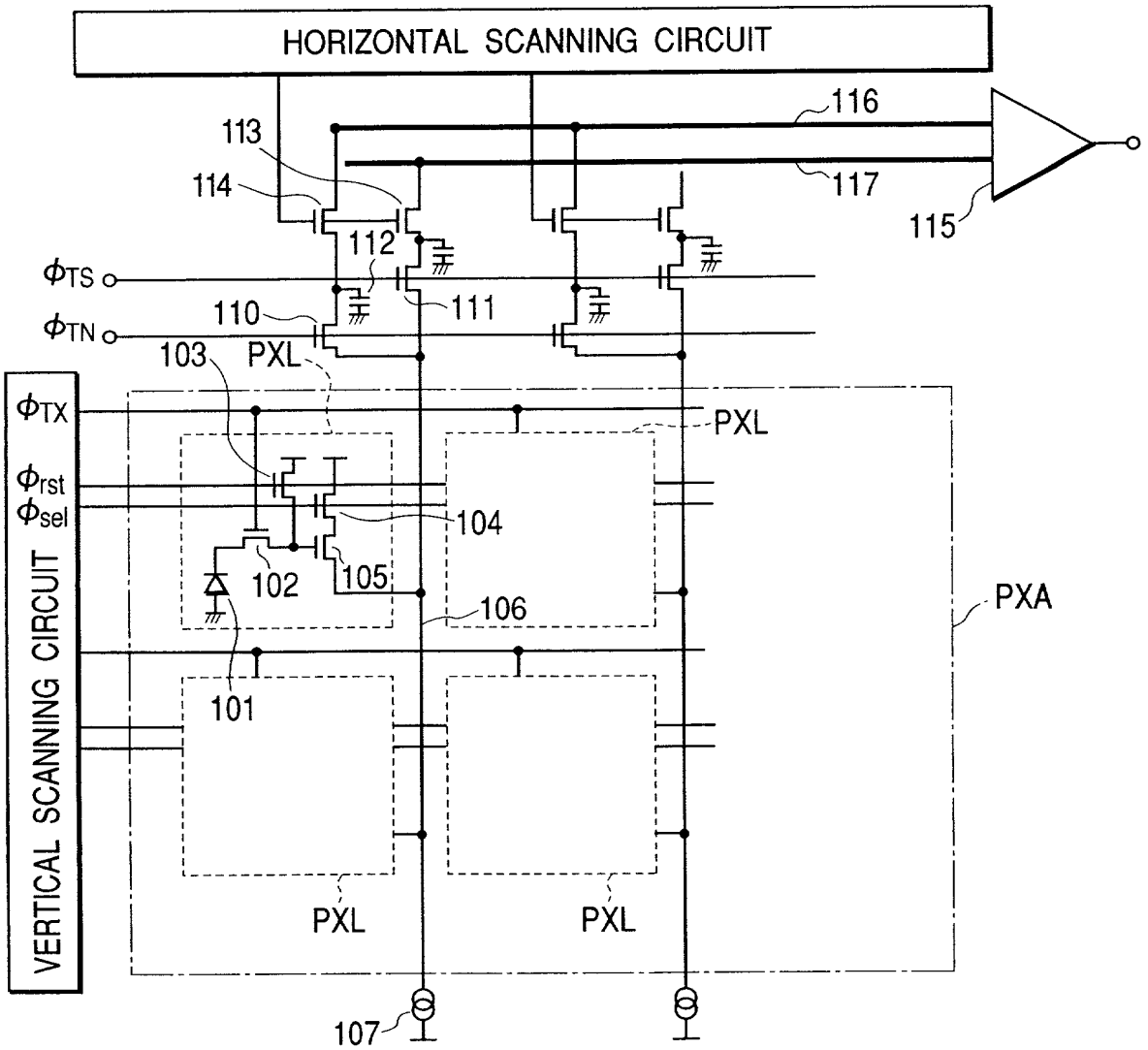

HORIZONTAL SCANNING CIRCUIT
VERTICAL SCANNING CIRCUIT
113
114
116
117
115
112
111
110
103
PXL
ΦTS
ΦTN
ΦTX
Φrst
Φsel
104
105
102
106
101
PXA
107

FIG. 17

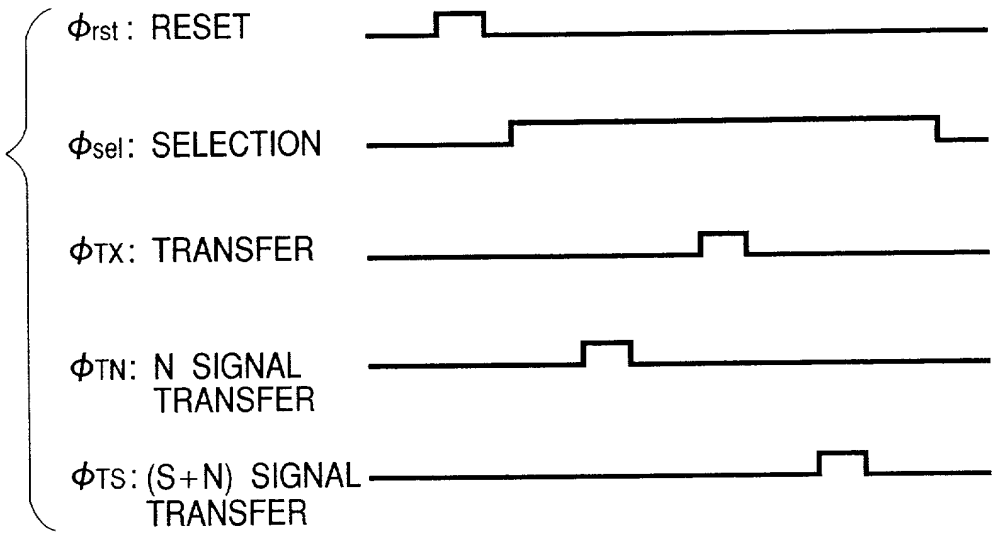

φrst : RESET
φsel : SELECTION
φTX : TRANSFER
φTN : N SIGNAL TRANSFER
φTS : (S+N) SIGNAL TRANSFER

FIG. 18

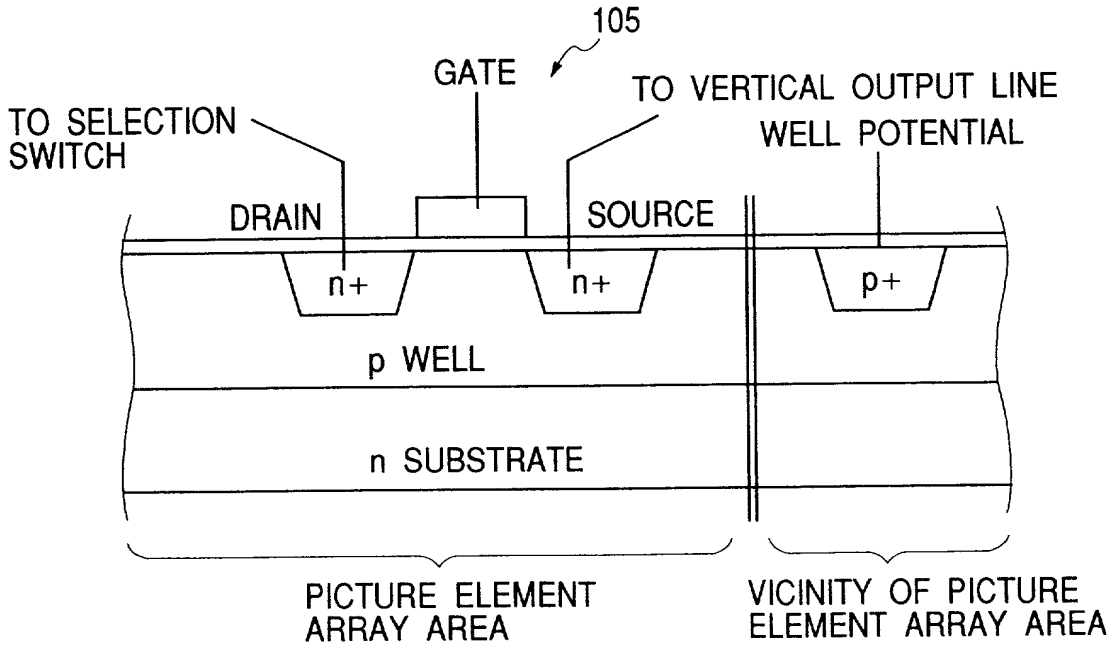

105
GATE
TO VERTICAL OUTPUT LINE
WELL POTENTIAL
TO SELECTION SWITCH
DRAIN
SOURCE
n+
n+
p+
p WELL
n SUBSTRATE
PICTURE ELEMENT ARRAY AREA
VICINITY OF PICTURE ELEMENT ARRAY AREA

FIG. 19A

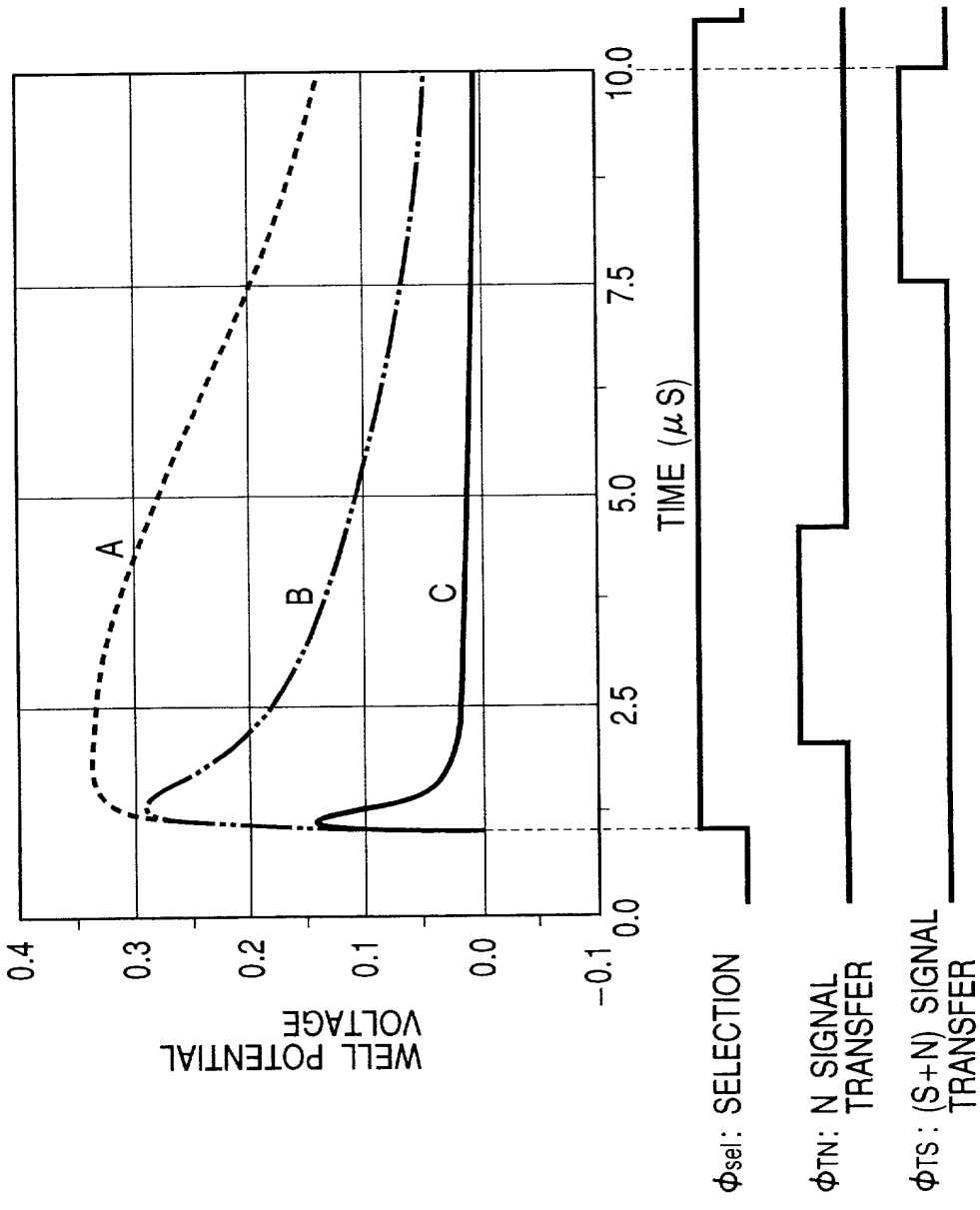
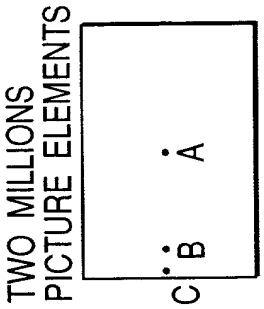


FIG. 19B



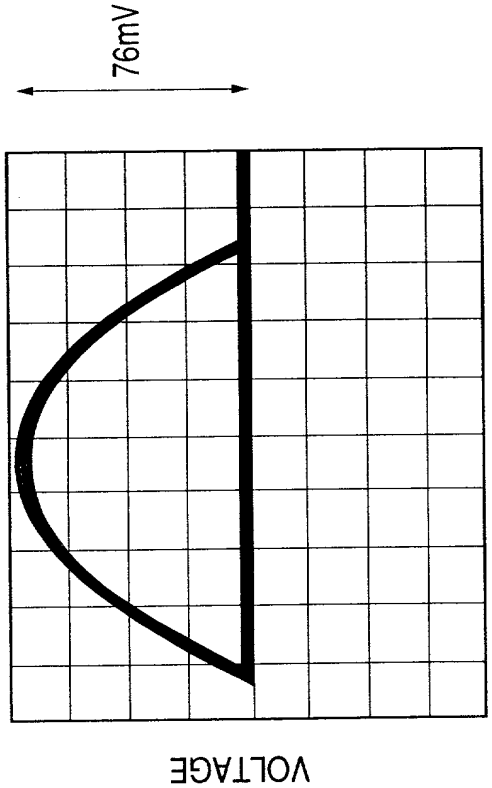

76mV
VOLTAGE
PICTURE ELEMENT POSITION

FIG. 20

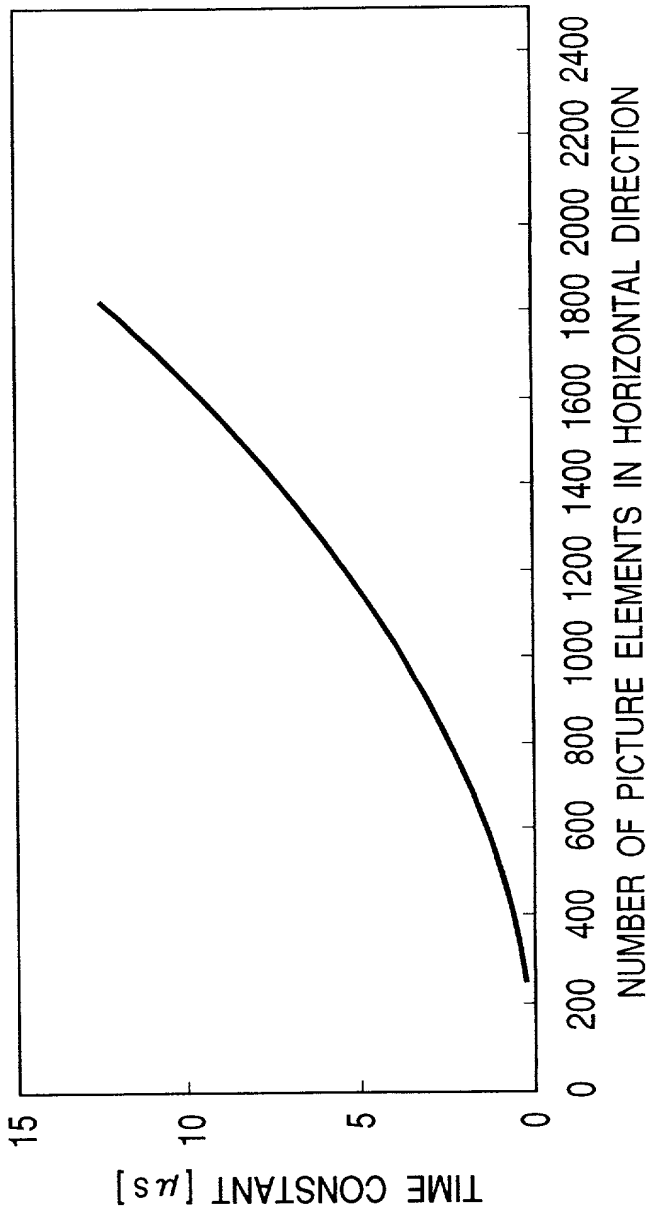

TIME CONSTANT [μs]
15
10
5
0
0
200
400
600
800
1000
1200
1400
1600
1800
2000
2200
2400
NUMBER OF PICTURE ELEMENTS IN HORIZONTAL DIRECTION

FIG. 21